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ABSTRACT

Students come to teacher preparation programs with well-formed, influential cognitive constructs about teaching; they come with a variety of constructs; and these constructs can be identified and accessed. The Myers-Briggs Type Indicator (MBTI) appears to be a way to access the constructs students hold. Subjects were 52 beginning teacher education program students. Two instruments were administered to the subjects during the first two weeks of classes: a survey form developed for the study and the MBTI. The types of data collected included: demographic data, teaching level, and subject area; responses to open-ended questions about subjects' background, prior teaching experiences, choice of teaching as a career, and teacher role model; the rank-ordering of 11 statements about the primary role of the teacher--what they valued most and would seek to emphasize in their classrooms; and personality types, with particular reference to perception and preferences. To effectively prepare students to become teachers, teacher educators must take into account students' different, persistent, stongly-held pre-existing cognitive constructs about teaching. (IAH)

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PRE-EXISTING TEACHING CONSTRUCTS: HOW STUDENTS "SEE" TEACHING PRIOR TO TRAINING

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PRE-EXISTING TEACHING CONSTRUCTS: HOW STUDENTS "SEE" TEACHING PRIOR TO TRAINING

BACKGROUND

Research on "the ways in which teachers think about their work and...give meaning to these beliefs in the classroom (Tabachnick, et. al., 1983,4)," constitutes an informed and informing avenue for understanding teaching, and a robust conceptual framework for studying teaching and teacher preparation. Such research has demonstrated the link between teachers' cognitive constructs, the ways in which they think about teaching, and their teaching behaviors, the ways in which they act in the classroom (see, for example, Clark and Peterson, 1986; Barnes, 1986; Calderhead, 1983,1987; Berliner, 1986). "What teachers choose to do is directed in no small measure by what they think...and how they think is informed by their perceptions and the meanings they ascribe (Clark and Peterson, 1986)." Research on student teachers shows a similar relationship between cognitive constructs about teaching and classroom behavior (Tabachnick, 1983; Hollingsworth, 1989; Veeman, 1984; Mertz and McNeely, 1990; Hoy and Woolfolk, 1990).

There is growing evidence that students come to teacher preparation programs with well-established, pre-existing cognitive constructs about teaching and that these constructs are a significant, unexamined variable in the teacher preparation process. Until recently, that evidence was largely suppositional. Lortie (1975) argued that students came to teacher education with "subjective understandings" about teaching that interfered with their learning new understandings." Clark (1988) posited that "students begin teacher education programs with their own ideas and beliefs about what it takes to be a success (7)." Hollingsworth (1989) concluded that "preprogram beliefs served as filters for processing program content and making sense of classroom contexts...(168)," in her study of 14 preservice teachers.

Holt-Reynolds (1991) studied the phenomenon directly. Reflecting on the relationship between expectation and reality, she observed:

> Given that preservice teachers base their lay beliefs on interpretations of actual experiences as students in classrooms and given the many generations of teachers we have credentialed through formal teacher education programs we should logically be able to expect that the classroom-based experiences of teaching and learning that our students

> have used as data upon which to build their lay theories of teaching would produce lay theories that approximate the professional knowledge base we intend to teach.
>
> Even limited observation of classroom practices, however, suggest that such assumptions are unwarranted (Ravitch, 1985). New teachers leave our universities and...develop classroom practices which do not implement the principles so carefully taught and which they evidently mastered during their sojourn at the university (Hollingsworth, 1989; Hoy, 1969; Knowles and Hoefler, 1989; Zeichner and Tabachnick, 1981). (3)

She studied nine preservice teachers as they were involved in leaning about principles of teaching. She found that the students came to teacher preparation with "powerful, personal history-based lay theories about good practice (2)," and that they interpreted the principles they were learning in light of those theories. Students defended their lay theories with practical arguments derived from their experiences as students, how it was for them, and these theories prevailed in the face of knowledge-based theories to the contrary. Holt-Reynolds concluded, "The prior, experience-based knowledge that preservice teachers bring with them to their study of teaching constrains as much as it illuminates, prejudices even as it colors, and short circuits as often as it leads to fresh insights (4)."

Given their existence, pre-existing understandings about teaching constitute a critical variable in the teacher preparation process. If indeed students bring such cognitive constructs to the preparation process, and if these preexisting constructs endure and prevail in the face of other, knowledge-based principles we may try to instill as part of teacher education, we may well be wasting our time and theirs in an ineffective, at best, and fruitless, at worst, endeavor. If we are to supplant the lay theories they bring which are in conflict with knowledge-based theories, we will, of necessity, as well as in consonance with a first principle of education, need to begin where the students are. To begin where the students are means, in this case, beginning with their constructs. What indeed are the constructs students hold about teaching? Do all students hold the same constructs? Are there themes to the constructs students hold? Is there a way to identify the constructs students hold so that we might frame (reframe) teacher education in terms of these constructs? These questions are central to considering cognitive constructs as critical variables in the teacher education process and provide the context for the current study.

CONTEXT AND OBJECTIVES

The authors have been engaged in a series of exploratory studies about the cognitive constructs of teachers. Beginning with an examination of the ways in which college and university teachers thought about teaching (Mertz and McNeely, 1990a), teachers who by and large had had no formal teacher preparation, proceeding to a study of how teacher education students thought about teaching before, during and after student teaching, (Mertz and McNeely, 1990b), the authors were struck by the existence and persistence of what appeared to be pre-existing cognitive constructs about teaching that powerfully influenced what these teachers did in the classroom and often contradicted what was, at least in the latter case, taught to them as "best practice" and which they attempted to practice, but discarded, as they assumed more classroom responsibility in their student teaching experience. The authors attempted to explore the existence and nature of such constructs by intensively interviewing ten prospective teachers (Mertz and McNeely, 1991). The students were interested in becoming teachers, were signed up for a pre-preparation field experience, but had not yet been accepted into the teacher education program . The subjects possessed deeply-embedded cognitive constructs about teaching, several different ones, and articulated them in terms of values about what was important to do as a teacher in the classroom.

Building on that work, the current study sought to expand the study of pre-existing constructs to a larger group of pre-preparation students to learn (1) if the idea of pre-existing constructs would hold up beyond the small group previously studied, (2) to identify the possible range of constructs held by preservice teachers, confirming, refuting and/or extending the number and kind of constructs identified in the prior study, and (3) to see if there were ways to access those constructs save by interviewing each student.

PROCEDURES

A group of students (n=52) who had been admitted to the teacher education program at a large, land-grant institution and were registered for their first course in the program, constituted the subjects of the study. They were a total population of their kind and included all who would fit the category. Each group was accessed during the first week of classes.

Two instruments were administered to all subjects: a survey instrument developed for the study and the Myers-Briggs Type Indicator. The survey form,

which grew out of the results of the prior research study (Mertz and McNeely, 1991), asked for (1) demographic data, including age, gender, and subject area and teaching level for which preparing; (2) responses to open-ended questions about the subjects' backgrounds, prior teaching experiences, and choice of teaching as a career, including a question asking them to identify any person after whom they would model themselves as a teacher; and (3) the rank-ordering of 11 statements about the primary role of the teacher, i.e., what they valued most and would seek to emphasize in their classroom. The statements were drawn from the interviews in the previous research and allowed the respondent to add additional statements where what they valued was not encompassed by an existing statement, before rank-ordering the statements.

The Myers-Briggs Type Indicator, which was also administered to all subjects, is a widely-used instrument for identifying peoples' preferences: where they primarily focus their attention, what they tend to notice and how they notice it (perception), the basis upon which they tend and prefer to make their judgements, and how they tend to frame the world in which they live. The instrument has been found to be both valid and reliable, and provides a way to access the preferences and perception, although not necessarily behaviors, of normal, healthy individuals. The instrument provides a four-letter descriptive type for each individual and there are 16 possible individual types. In the literature, however, the results are most often spoken of in terms of four major type categories: SJ; SP; NF; and NT. Research using the MBTI suggests significant differences in perceptions among the four major types.

The demographic and numeric (rank-order) data were analyzed using simple statistical procedures resulting in averages, percents, and frequencies. The numeric results were then examined in terms of MBTI category by individual and for the group. The responses to the open-ended questions were compared with the demographic data, the numeric data, and the MBTI category by individual and for the group. The search for patterns that might describe and/or define the subjects guided the analysis.

FINDINGS

Demographically, 88% (46) of the subjects were female and 12% (6) were male. In terms of the school level for which they were preparing, 52% (27) were preparing to be elementary school teachers and 48% (25) were preparing to be secondary school teachers. Only one male was preparing to be an elementary

school teacher. The small number of males in the study overall made it difficult to make any statements about gender as a factor in the choices subjects made.

The majority of the subjects (78%) were between 20 and 25 years of age and the largest percentage (44%) was 21 years old. Only 2% were 19 or younger or between 26 and 50 years of age. Sixty-nine percent (36) had a teacher in their family, and in 40% of these cases the teacher was a member of their immediate family. Fifty percent (26) of them had had some experience in teaching, primarily in Sunday school or at camp.

Ninety-two percent (48) identified a model, a person after whom they planned to model themselves as a teacher. Only four subjects did not identify such a person. Interestingly enough, of the 48 students who identified a model, 52% (27) were planning to teach at the same level and/or subject area as their model.

Table 1 identifies the 11 statements subjects were asked to rank order about what they valued and would emphasize in their classrooms. It also shows the percentage of the group as a whole that chose each statement as <u>most important</u> (ranked #1) and <u>least important</u> (ranked #11). As can be seen, 28% of the group chose #6 (to help each student develop self-esteem and feelings of self-worth) as most important, and 22% of the group chose #4 (to develop and expand the students' abilities to think and reason). The rest of the responses were divided amongst 7 of the 9 remaining statements. No one added a statement or chose #8 or #10 as most important. In terms of what the respondents ranked least important, 34% chose #5 (to develop good productive citizens), and 17% chose #10 (to help students develop appropriate moral and personal codes of conduct). The rest of the responses were divided amongst 6 of the 9 remaining responses. No one chose #6, #8, or #9 as least important.

Forty-seven of the 52 subjects took the MBTI. For the group as a whole, 49% (23) were SJ's, 13% (6) were SP's, 21% (10) were NF's, and 17% (8) were NT's. These findings are presented in Table 2 by each of the eight possible letters and by the four group types. The findings are compared with national norms for educators as a group. While it should be noted that the subjects were not practicing educators, when compared to national percentages, the subject population contained fewer SJ's and NF's, and more SP's and NT's.

When statement choice was compared with Myers-Briggs Type, clear patterns in the choices emerged. Table 3 shows the statements chosen as most and least important (valued) by Myers-Briggs Type. These patterns were equally

Table 1. Subjects Selecting Statements as Most and Least Valued, Reported by Percent		
Value Statement	**Most Valued**	**Least Valued**
1. To insure the transmission of relevant, necessary content information	8.5	8.5
2. To promote active student involvement and participation in as many class activities as possible	2	13
3. To create an orderly, well-disciplined environment for learning in the classroom	4	15
4. To develop and expand the students' abilities to think and reason	21.5	2
5. To develop good, productive citizens	2	34
6. To help each student develop self-esteem and feelings of self-worth	28	0
7. To develop students' social skills and abilities to interact successfully with others	2	2
8. To promote responsibility and attitudes of respect in students	0	0
9. To help each student develop his/her potential, gifts and talents to the highest degree possible	19	0
10. To help students develop appropriate moral and personal codes of conduct	0	17
11. To have students develop a sense of joy and excitement about learning	13	8.5

Table 2. A Comparison of Subjects and National Norms, by MBTI Letters and Group Type, Reported by Percent

Individual Letter	Subject Group (percent)	National Norms (percent)
Introvert (I)	49	25
Extrovert (E)	51	75
Intuitive (N)	38	25
Sensing (S)	62	75
Thinking (T)	34	50
Feeling (F)	66	50
Perceptive (P)	32	50
Judging (J)	68	50
Group Type	**Subject Group (percent)**	**National Norms (percent)**
SJ	49	38
SP	13	38
NF	21	12
NT	17	12

Table 3. Results of Subjects Choices of Least and Most Important, Reported by Myers-Briggs Type and Percent

Individual Type	Most Important by Percent of Choice	Least Important by Percent of Choice
ISTJ (4%)	#1/100%	#10/100%
ISFJ (15%)	#6/57%	#10/43%
ESTJ (13%)	#4/33%	#11/50%
ESFJ (17%)	#6/50%	#5/50%
ISTP (0%)		
ISFP (6%)	#6/67%	#3/67%
ESTP (0%)		
ESFP (6%)	#6/67%	#5/67%
INFJ (6%)	#9/67%	#3/67%
INFP (8.5%)	#9/75%	#2/50%
ENFJ (4%)	#6/50% #9/50%	#5/100%
ENFP (2%)	#2/100%	#3/100%
INTJ (4%)	#4/100%	#5/50% #2/50%
INTP (4%)	#4/50% #11/50%	#2/50% #10/50%
ENTJ (4%)	#4/50% #11/50%	#5/100%
ENTP (4%)	#4/100%	#5/50% #2/50%

strong in terms of the four major group types, and even stronger in terms of certain letters within the types. These patterns of choice by Myers-Briggs group type and letters are shown in Table 4.

There were two patterns of first choice among the SJ's. Thirty-five percent chose #6 (to help each student develop self-esteem and feelings of self-worth), and 22% chose #4 (to develop and expand the students' abilities to think and reason). Fifty percent of the STJ's chose #4 as most important and another 25% of them chose it as one of their top three choices. No STJ chose #6 as a first or second choice, and only 25% selected it third. Fifty-three percent of SFJ's selected #6 as their top choice and another 27% selected it second or third. Only 13% of them selected #4 among their top three choices. Twenty-six percent of the SJ's valued #1 least (to ensure the transmission of relevant, necessary content information), 22% valued #5 least (to develop good, productive citizens), and 17% valued #10 least (to help students develop appropriate moral and personal codes of conduct). Forty percent of the STJ's chose #11 as least important (to have students develop a sense of joy and excitement about learning). Forty percent of the SFJ's chose #1 as least important (to insure the transmission of relevant, necessary content information).

Thirteen percent (6) of the subjects were not merely SP's, but SFP's. There were no STP's in the study, the other possible combination. Fifty percent of the SP's chose #6 (to help each student develop self-esteem and feelings of self-worth), as had 53% of SFJ's. An additional 33% of the SP's chose #6 second. A third of the SP's valued #2 least (to promote active student involvement and participation in as many class activities as possible), and another third valued #3 least (to create an orderly, well-disciplined environment for learning in the classroom).

Sixty percent of the NF's chose #9 (to help each student develop his/her potential, gifts and talents to the highest degree possible) as most important. Only 20% did not choose #9 as their first or second choice. This was a totally different choice from that which was made by any other group. No NF chose #4 as most important. When it came to the least important, 20% each chose #1,2,3 and 5.

Seventy-five percent of the NT's chose #4 (to develop and expand the students'abilities to think and reason), as had 50% of STJ's. Another 12% of the NT's chose #4 as their second choice. In contrast with the NF's, who are usually more like NT's than are SJ's, only 25% of the NT's chose #11 among the first three top choices (most important), and only 12% chose #9 as even a

Table 4. Results of Subjects Choices of Least and Most Important, Reported by Myers-Briggs Letters F or T and Group Type, by Percent

Individual Letters	Most Important by Percent of Choice	Least Important by Percent of Choice
F	#6/38 #9/26 #11/13	#5/52
T	#4/63	#5/56
Group Type	**Most Important by Percent of Choice**	**Least Important by Percent of Choice**
SJ	#6/35 #4/22	#1/26 #5/22 #10/17
SP	#6/50	#2/33 #3/33
NF	#9/60	#1, 2, 3, 5/20 each
NT	#4/75	#5/75

third choice. Seventy-five percent chose #5 (to develop good, productive citizens) as least important and 75% included #10 (to help students develop appropriate moral and personal codes of conduct) as one of the three least important choices.

The relationship between Myers-Briggs Type and first choice was even stronger when examined in terms of two of the Myers-Briggs Type letters. As can be seen in Table 4, 34% (16) of the subjects were T's and 66% (31) were F's. Sixty-three percent of the T's valued #4 most, and 78% of the F's valued either #6 (38%), #9 (26%), or #11 (13%) most.

DISCUSSION

The results of the study reaffirmed the notion that students come to teacher preparation programs with well-formed, influential cognitive constructs about teaching; that students come with a variety of constructs; and that the constructs can be identified and accessed. The constructs identified in the study do appear to tap into the range of constructs, although it is presumptuous at this point to assume that all possible constructs have been identified. The Myers-Briggs Type Indicator does appear to be a way to access the constructs students hold, particularly if one uses the results of typing as an indication of the many different constructs held by students in one's class rather than the label for a particular student.

In terms of accessing the constructs students hold about teaching, the ways in which they think about teaching, two of the eight Myers-Briggs type profile letters appear to be most influential and revealing. Whether one is a T or an F appears to be a critical factor in the way in which a prospective teacher frames the context and purpose of education, and "sees" students. The other letters may help to define the ways in which the constructs are operationalized, but it is the F or T which seems to most clearly identify the construct.

By and large, teacher preparation programs operate **as if** all students either come with no pre-existing constructs or with one, shared, infinitely malleable one. Thus we can go about the process of **laying on** the construct(s) dictated by our knowledge-base and experiences as if we were playing on a level field. This study, along with other studies and writings about the constructs held by prospective teachers, confirms that this is just not the case. Prospective teachers come to our programs **with** constructs, with several different, conflicting constructs, and the constructs they hold constitute the perceptual

frame they bring to the preparation process. This frame dictates what they see and hear, and how they interpret what we attempt to convey to them. Even more, this frame may be so deeply rooted and influential, that it persists despite what we may teach the student to say teaching is about and even to practice under our guidance, and may account for the results of studies of the effectiveness of teacher education programs. It has long been said that such programs have little effect on the behavior of the teacher that emerges, that teachers teach as they were taught, i.e., once they get out they revert to the ways in which they were taught. It may be that the constructs they bring to teacher education programs are so strongly-held and rooted in the values they hold that mere knowledge and practice do not uproot them.

As a practical matter, if we are to make a difference in the effectiveness of the persons we prepare, we will have to take the idea of different, persistent, strongly-held pre-existing cognitive constructs about teaching amongst our students more seriously. If there is any hope of altering the ones they may hold that are antithetical to knowledge-based theories, it lies in exploring, exposing, and testing the viability of the theories students bring with them, each different one. If it is not possible to radically alter the constructs they bring, then our task may be to help them to operationalize the constructs they hold, each one of them, most effectively and thoughtfully.

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